

**REMARKS**

Claims 1-20 remain in the application. Reconsideration of the application and allowance of all claims are respectfully requested in view of the above amendments and the following remarks

Claims 1-4, 6-11 and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Sawdey* in view of *Tsunoda*. Claim 5 is rejected under 35 USC 103(a) as unpatentable over *Sawdey* in view of *Tsunoda*, and further in view of *Fiedziuszko et al.* Claims 12-14 and 16-19 are rejected as obvious over *Sawdey* in view of *Langer*. Claim 15 is rejected as obvious over *Sawdey* in view of *Langer* and in further view of *Fiedziuszko et al.* These rejections are respectfully traversed.

*Sawdey* discloses a multiplexer having a plurality of manifolds interconnected by bandpass filters of different spectral passbands. *Sawdey* does not teach or suggest that the filter heads are configured as to be selectively connectable either to a corresponding covering for short circuit purposes or to a respective filter tail in order to provide a full filter functionality.

The Examiner relies on *Tsunoda* as remedying this deficiency of *Sawdey*. It is submitted that the examiner is misinterpreting and/or misapplying the teaching of *Tsunoda*. *Tsunoda* teaches that Filter 1 and Filter 2 can operate independently of one another. The filter structure can be operated such that when diode D1 is closed and D2 open, reactance r13 is short-circuited at both ends. In this state, r13 presents a high impedance to signals in the band of interest, and ports 2 and 3 can be used as input and output ports without any signal being passed to the port 1. This is all described in paragraph [0013].

This operation of *Tsunoda* has nothing whatsoever to do with selectively connecting a filter head to either a filter tail or to a short circuiting plate. In his remarks at page 3 of the Office action, the examiner justifies the reliance on *Tsunoda* by considering one end of the reactance  $r_{13}$  to be a filter head and the other end of reactance  $r_{13}$  to be a filter tail. The examiner gives no justification for this. It appears that the examiner may be reading the present claim language such that the head and tail are simply two ends of a filter, and the reactance  $r_{13}$  is a filter. The examiner is wrong on both counts. A filter head is not simply an end of a filter, but at least a first cavity of a filter. This is explained at multiple points in the specification, and is indeed specifically recited in claim 2. There is simply no support for an interpretation of *Tsunoda* such that one end of the reactance  $r_{13}$  is a filter head.

Thus,  $r_{13}$  is not a filter, the ends of  $r_{13}$  are not a filter head and tail, and *Tsunoda* does not teach selectively connecting the filter head either to a short circuit of a filter tail.

It is further important to note that the filter head and filter tail referred to in the present application are not merely "two parts" of a filter separated by a wall. Indeed, claim 1 recites that the filter head has "only a single cavity which is the same as the first resonant cavity of said at least one filter". This choice of providing a filter head having a single cavity corresponding to the first cavity of a channel filter is not at all arbitrary. Indeed, as stated on page 5, lines 31 to 34, the phase-behavior of a channel in its out band is mainly due to the first elements (i.e. to the first cavity) of the filter. Therefore, the division of the filter into a filter head and a filter tail is not arbitrary, but is aimed to obtain a filter head (from which the out band of the channel mainly depends) fixed to the manifold and a filter tail (substantially not affecting the out band) detachable from the filter head.

As to statement ii), it is submitted that applying the teaching of *Tsunoda* to *Sawdey* would not lead to the subject matter of claim 1. The filter of *Tsunoda* is made of parallel lines (e.g. the lines R11, R12, R13 for filter 1) having a grounded end and an open circuit end that can be grounded by operating the switches D1 and D2. This has nothing to do with a filter head selectively connectable either to a covering plate for short circuit purposes or to a filter tail (that, as said above, includes all the cavities except the first one of the channel filters).

As to new claim 12, the Examiner maintains that such claim is obvious over *Sawdey* in view of *Langer*. This rejection is also respectfully traversed.

*Sawdey* is already discussed above. In *Langer*, the separating filter unit 10 and the expansion unit 13 do not correspond to the filter head and filter tail of a channel filter. Indeed, while filter head and filter tail are parts of a same channel filter, the separating filter unit 10 is a multiplexer suitable for multiplexing-demultiplexing  $n_0$  channels (and therefore having  $n_0$  channel filters, see Figure 2), and the expansion unit 13 is a further multiplexer suitable for multiplexing-demultiplexing  $n_1$  channels (and therefore having  $n_1$  channel filters, see Figure 2). In each multiplexer 10 or 13, each channel filter is not divided into a filter head fixed to the manifold and a filter tail removable from the filter head. Accordingly, applying the teaching of *Langer* to *Sawdey* would not lead to the subject matter of new claim 12.

Finally, and importantly, even if *Tsunoda* and *Langer* were to teach selectively operating filters either alone or in series, modifying *Sawdey* to incorporate this feature would not satisfy applicant's claims.

Note that claims 1, 6 and 12 recite a filter having first and second cavities. Claims 1, 6 and 12 recite that, in addition to the filter with first and second cavities, there is a filter head

having a resonant cavity. Thus, to satisfy the claims there must be a minimum of three cavities, i.e., the first and second cavities of the first filter as well as the cavity of the filter head. The examiner has erroneously regarded *Sawdey* as teaching a filter as well as a filter head, but in doing so must read the first cavity of the filter as both the first cavity of the filter and as the filter head. But this is inconsistent with the claims which recites the multiplexer as including (1) a filter of first and second cavities *and* (2) a filter head having a single cavity. So even if *Sawdey* were modified so that the first cavity of the filter could be operated either alone or in combination with additional cavities, the claimed invention would not result.

For the above reasons, it is submitted that the invention patentably distinguishes over the applied art, and allowance of all claims is requested.

Respectfully submitted,

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